

Docket#: WDGNP001  
Serial No.: 09/825,753

## ABSTRACT

A method and apparatus for binding arguments of a call instruction includes maintaining a mapping of virtual to physical registers, and binding arguments by copying mappings (rather than values). A related aspect includes selectively pushing the mapping state to a stack when processing a call instruction, and selectively popping the mapping from the stack when processing a return instruction. The mapping state includes an address of the physical register mapped to the corresponding virtual register, and a status indicator including states corresponding to clean and not clean (or dirty). Another related aspect provides for designation of a subset of the virtual registers as local virtual local registers. When processing a call instruction all of the virtual local register mappings are pushed, and when processing a return instruction the virtual local register mappings are popped. A method for mapping a plurality of virtual registers to a plurality of physical registers is provided. Generally, a plurality of virtual registers are provided where each virtual register comprises physical register address bits. A status indicator for indicating the status of each virtual register is also provided. A processing device is also provided. The processing device has a plurality of physical registers. A plurality of virtual registers, wherein each virtual register comprises physical register address bits form part of the processing device. The processing device also has a status indicator for indicating a status of each virtual register.